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ABSTRACT

The state of vocational education and training (VET) in Ukraine was examined. The study focused on the following topics: Ukraine's socioeconomic conditions; Ukraine's labor market; general VET policy and legislation; and Ukraine's VET system. Selected findings were as follows: (1) although Ukraine's socioeconomic situation continues to be unstable, encouraging signs are emerging; (2) crises in Ukraine's economy and social and public life have slowed the pace and character of reforms in Ukraine's entire educational system, especially in its VET system. The following actions have been deemed critical: (1) improve the network of VET institutions; (2) open new types of training institutions, integrate practitioners, and formulate new standards; (3) develop new curricula and train/retrain teaching staff; (4) introduce new vocational training for teachers and public materials related to today's occupations; (5) issue up-to-date course material and make modern educational and production technologies part of the practical teaching process; (6) strengthen ties between teaching institutions, employers, and other social partners; and (7) improve pay and social protection for individuals working in education. (The following items are appended: an diagram of Ukraine's education system; a table detailing the Ukraine National Education System; a discussion of bilateral and multilateral collaboration in VET; and a list of main organizations. The bibliography lists 35 references.) (MN)

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# National Observatory of Ukraine

## Vocational education and training in Ukraine 2002

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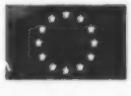

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MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

# National Observatory report on vocational education and training in Ukraine

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The report, *Development of a Vocational Education System in Ukraine*, covers features unique to Ukraine (1998-2000).

Kiev
2001

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# Introduction

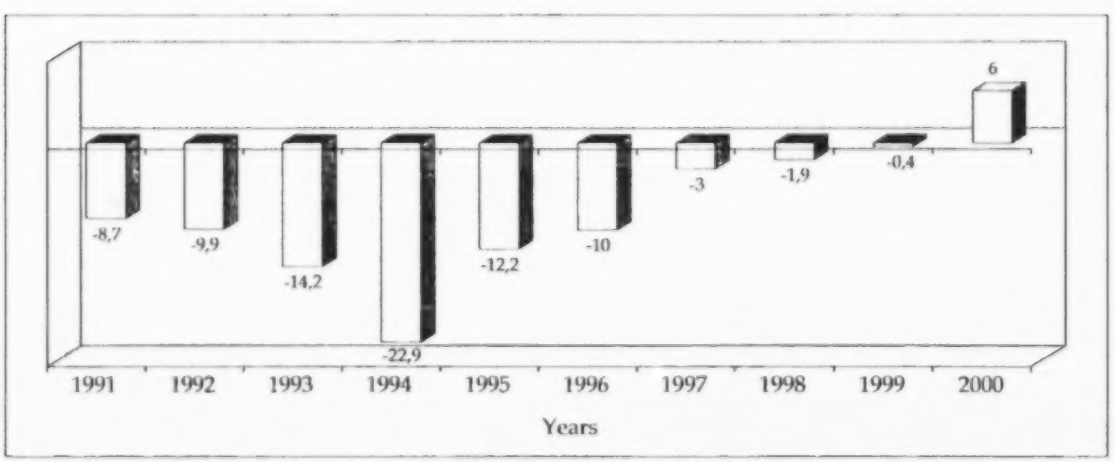
This report, *Development of a Vocational Education System in Ukraine*, discusses features that emerged in Ukraine between 1998 and 2000. The English version is slightly different from the Russian version. During the process of finalisation of the English version it was possible to benefit from additional new material, which has been included. However, the main conclusions remain the same.

# 1. The political and socio-economic situation

## 1.1 *Aspects of socio-economic development in Ukraine*

During the economic crisis (1990-99), gross domestic product fell by 59.2%; the volume of industrial product, by 48.9%; and agriculture, by 51.5%. Real earnings decreased by a factor of 3.82, and real pensions by a factor of 4. This diagram charts changes in gross domestic product by percentage during the period.

***Figure 1.1:*** ***[35]***



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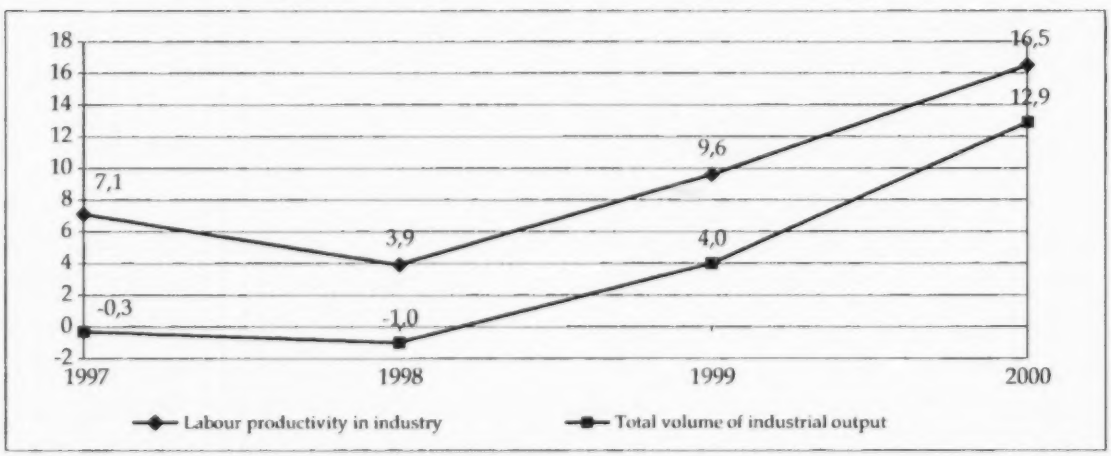
The most obvious downturn in our economy happened during 1990-94 when the volume of gross domestic product dropped by 45.6%; industrial output, by 40.4%; and agriculture, by 32.5%. It was not until 1994 that the fall in gross domestic product stabilised at 22.9%; industrial output (including non-food goods) at 27.3%; and agriculture at 16.5%. The monetary and financial systems appeared to be completely out of balance. In 1993, hyperinflation had a disastrous impact when it soared to an all-time high of 10,256%. At that point, the National Bank of Ukraine covered the state budget deficit by monetising the deficit; and, by 1994, the exchange rate of Ukrainian National Curence to the US dollar fell by a factor of 8.3. This was the most dramatic fall in gross domestic product ever experienced by Ukraine in peace-time. And it took five long strenuous years to repair the damage to our economy.

By 2000, the economy had recovered from the crisis. Gross domestic product was up by 6%; industrial output by 12.9%; and agriculture by 9.2%. Our budget increased, investments and credit activity revived, the amount of money circulating in the economy rose, export potential increased, and external debt fell.

Experts thought this stage of economic recovery from the long economic crisis started in the first half of 1997. However, it stopped abruptly following the world financial crisis (1997-98) and errors in monetary and fiscal policy. As a result, the National Bank of Ukraine's currency reserves dropped from US$ 2,341.1 million in 1997 to US$ 761.3 million in 1998; our national external debt approached crisis point and exports slumped dramatically.

All these processes combined to bring about a surge in investment. Since 1998, the curve showing the growth rate of fixed capital investment has leapt ahead of gross domestic product and industrial production. Investments increased by 11.1% in the third quarter of 1999 compared with the equivalent period in 1998, while industrial production grew by 9.4%. In the fourth quarter of 1999 investment grew by 11.4% and industrial production by 9.8%. By the end of 1999 growth in almost all branches of industry was rising. A significant number of businesses had restructured and adapted to new market conditions. This diagram charts the changing volume in industrial output and labour productivity.

***Figure 1.2: Increase in growth and fall (-) in volume of industrial output and labour productivity in industry in 1997-2000, as % of previous year [35]***



The increase in productivity was a key index of upward trends in industry. Also improving on the previous year's results were these features of the 1998-99 reforms:

- Transition to monetary privatisation after 1999;
- Tax reforms to help small and medium-sized enterprises;
- Cuts in tax. These included a reduced pay fund, and end to manufacturers' contributions to the Chernobyl Fund, and a single fixed agri-tax instead of ten. The level of state demand (revenue to the consolidated budget) fell from 30.1% of gross domestic product (1997) to 28.2% (1998) and 25.3% (1999);
- A new network of economic zones and territories with a specific investment programme;
- Cuts in non-monetary expenses and payments. By January 2000, these had proved their worth with the level of barter in industry falling from 34.8% in January 1999 to 18.8%.

In 1999, the overall outcome of stabilisation was a rise in industrial output by 4.0% and in consumer goods by 7.2%. This improvement in the balance of trade in goods and services totalled US$ 2.3 billion in 1999, paving the way for further advances in the following year.

## 1.2 *Demography*

The demographic situation, which reflects the overall socio-economic position in Ukraine, went on deteriorating in 1998 and 1999.

***Figure 1.3: Total population [35]***

| | 1989 | 1991 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|
| Total population, in million | 51,7 | 51,9 | 51,3 | 50,9 | 50,5 | 50,1 | 49,7 | 49,3 |
| Men | 23,9 | 24,1 | 23,9 | 23,7 | 23,5 | 23,3 | 23,1 | 22,9 |
| Women | 27,8 | 27,8 | 27,4 | 27,2 | 27,0 | 26,8 | 26,6 | 26,4 |

In 1999, Ukraine's population had fallen by 394,800 (7,900 per thousand inhabitants) and at the start of 2000 it was 49,710,800. The population declined for seven years but has more or less stabilised over the past three years (Figure 1.4).

***Figure 1.4: [35]***

| | 1997 | 1998 | 1999 |
|---|---|---|---|
| Overall fall in population (in thousands) | 393.6 | 394.3 | 394.8 |
| Per 1000 people | 7.8 | 7.8 | 7.9 |

Changes in the population were mainly due to natural movement and migration. Until 1990 there was a natural rise in the population and the effect of migration was minimal.



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*Figure 1.5: Births, deaths and natural population increace [35]*

| | 1990 | 1995 | 1996 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|
| Total birth, in thousand | 657,2 | 492,9 | 467,2 | 419,2 | 389,2 | 385,1 |
| Total death, in thousand | 629,6 | 792,6 | 776,7 | 719,9 | 739,2 | 758,1 |
| Natural population increace, in thousand | 27,6 | - 299,7 | - 309,5 | - 300,7 | -350,0 | -373,0 |
| **Rates per 1000 people** | | | | | | |
| Total birth | 12,7 | 9,6 | 9,1 | 8,3 | 7,8 | 7,8 |
| Total death | 12,1 | 15,4 | 15,2 | 14,3 | 14,8 | 15,3 |
| Natural population increace | 0,6 | -5,8 | -6,1 | -6,0 | -7,0 | -7,5 |

From 1990, however, migration began to erode the population and by 1992 the effect was significant. The situation continued to deteriorate, and, in the years up to 1999, migration caused the total population to fall by a third.

*Figure 1.6: Interstate population migration [35]*

| | 1999 | 2000 |
|---|---|---|
| Number of income, person | 65794 | 53712 |
| Number of outcome, person | 110589 | 100325 |
| Saldo of migration, person | - 44795 | - 46613 |
| **Rates per 1000 people** | | |
| Number of income | 1,3 | 1,1 |
| Number of outcome | 2,2 | 2,0 |
| Saldo of migration | -0,9 | -0,9 |

In 1999, 88.7% of the fall in population was due to natural reduction and 11.3% to migration. From (year) to (year), there was a continuous natural reduction, and the birth rate per 1000 fell from 12.1% to 7.8%. Between 1991 and 1995, mortality rose from 12.9% to 15.4%. Over the next three years, it fell to 14.3%, only to rise again from 1999 on. As a result, 1999 witnessed the greatest natural reduction over the decade, 7.9 people per 1000.

Changes in the natural movement of the population and migration processes led to a diminished birth rate. Over the last 10 years, Ukraine has seen its population decrease as a result of fewer people bearing fewer children. At present, the effects of depopulation have not had a serious effect, but, over the next six or seven years, those born between 1991 and 1992 will enter the labour market - and we will notice the difference.

In 1999, the children born in 1983 reached working age and represent the largest influx into the labour market over the past 40 years. Over the next five years, the number of employable adults will rise due to the baby boom in the middle and late 1980s. At the same time, men and women born pre-war and at the beginning of the war are now retiring. Because of the baby boom of the 1980s, the workforce will be relatively undiminished by the departure of those born when the birth rate was low during and just after the war. However, from 2006 onwards, we expect the demographic burden on those of working age to rise.



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The rapid fall in the birth rate, longer life-spans and the migration of working-age people has accelerated the process of population ageing. As a result, on 1 January 2000, 20.5% of the Ukrainian population was aged 60 or over. The structure of the population, in age and gender terms, must effect a country's socio-economic situation. This structure not only affects its capacity to sustain a high birth rate, but also its capacity to run a viable economy.

# 2. The labour market

## 2.1 *Labour market*

Levels of employment and unemployment are the most important indices of a country's use of human resources and the state of its economy. From 1995 to 1999, the workforce stayed unchanged at about 30 million.

In 1999, the average number of 15-70s who for various reasons were unemployed was 16.5 million, or 41.5% of the age group (according to selective enquiries data). The International Labour Organisation definition of unemployment does not include those who have officially registered with the State Employment Service. Together with the International Labour Organisation definition, the term "so-called registered unemployment" is used in many countries. If jobless citizens are registered at the State Employment Services, we refer to them as unemployed.

In 1999, we recorded the following trends as typical of the labour market:

- Fewer people are being laid off. At the beginning of 1999, it was forecast that due to restructuring in factories there would be 485,500 lay-offs from businesses and institutions. In fact, the figure was only 240,100 - 12.2% less than in 1998 and less than half the total forecast. Of those who lost their jobs, 62.6% were women and 10.9% were 28 or younger. Half the redundancies were from the manual sector, and a third were white-collar workers. The majority of manual workers had been in industry (42.9%) or in trade and catering (10.4%). Redundancies were particularly high in collectively owned enterprises.
- There is a rise in the unemployed and long-term unemployed. Compared with 1998, the number of jobless people registered at the Employment Centre rose by 21.6% and the duration of their time on the register rose from 9.9 to 11.4 months. Between 1998 and 1999, registered unemployment rose from 3.7% to 4.3%. Compared with the previous year, the need for workers rose by 46.4%, and the number of those who obtained work through the Employment Centre rose by 26%.

Forecasts for the registered labour market up to 2004 suggest conditions will deteriorate due to pressures on the economy and other factors such as inflation and demographic growth. The next five or six years may therefore see a rise in the available workforce. Restructuring, reorganisation and privatisation of enterprises always entail redundancies and, due to the withdrawal of fixed assets as a result of total wear and tear, fewer jobs.

The most encouraging feature of our labour market is a better educated workforce. 88% of men and 90% of women have full intermediate and higher vocational education. For details of the education of unemployed aged 25-59 by gender, see Figure 2.1

*Figure 2.1: Unemployed by gender and education (%) (1 Jan 2000) [35]*

| | Incomplete intermediate education | Full intermediate and vocational education | Higher vocational education |
|---|---|---|---|
| **Men (age range)** | | | |
| 25- 29 | 10 | 61 | 29 |
| 30-39 | 8 | 60 | 32 |
| 40-49 | 11 | 56 | 33 |
| 50-59 | 20 | 47 | 33 |
| 25-59 | 12 | 56 | 32 |
| **Women (age range)** | | | |
| 25-29 | 7 | 41 | 52 |
| 30-39 | 7 | 42 | 51 |
| 40-49 | 10 | 40 | 50 |
| 50-59 | 22 | 35 | 43 |
| 25-59 | 10 | 40 | 50 |

## 2.2 *Employment*

Throughout 1999 the redistribution of the economically active continued. The total number of employed fell by 525,000 or 2.3% and, over the year, the average was 21.8 million. Most characteristic of the year was the reassignment of the workforce across different types of employment. Layoffs were mostly in industry, timber, fishing, and transport. All told, the workforce shrunk by 5.7-6.5%. The workforce also continued to move away from sectors such as manufacturing, construction and agriculture and into service: in trade, catering, procurement, materials and machinery supply, sales and marketing, by an average of 4.2%; in housing, utilities and non-production consumer services, by 5.0%; and in health, physical culture and social security, by 0.9%. The flow from state employment into the non-state sector (collective and private) continued. Between 1995 and 1999, the number of workers in state organisations fell every year by an average 639,600. In 1999, the state employed 7.7 million, 35.5% of the total employed.

The growth in new businesses and self-employment could not keep pace with the number of those laid off by the state. Between 1995 and 1999, the number of self-employed rose to 1,270,600 while the total of salaried workers fell by 3,607,000. It follows that one in three (35.2%) laid off by manufacturing or services found independent employment. During 1999, employment in wholesale and retail trading rose consistently; between March and December it increased by 15.3%. As for the type of economic activity, in 1999 every fourth person worked in industry; every fifth person in agriculture; every sixth in education and health; and every tenth in wholesale or retail.

Part-time work, whether voluntary or commissioned, is crucial to the labour market. In 1999, 386,300 or 1.8% of those in large or medium-sized business were part-time, while eight out of ten were women. This type of employment is particularly common in sectors such as health protection and art (where part-timers make up 5.8% of the workforce) consumer services (6.7%) and communications (16.3%). In manufacturing and construction, part-timers account for less than 1% of the total workforce.



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Commissioned part-time work still plays a key role. In 1999, employers asked a fifth of their staff to take some unpaid leave. As a result, individual staff worked for less than an annual average of 530 hours. For 60% of these workers, their leave lasted more than three months. Commissioned part-time work often takes the form of a short working week. Over the year, 2.1 million workers worked on this basis, putting in 350 hours or 17.5% less time over the year than full-time workers. The number of those in part-time employment has tended to decrease: in 1998 it was 2.2 million as against 2.1 million in 1999.

The practice of offering leave is more common in the transport, manufacturing and construction sectors.

## 2.3 *Unemployment*

Unemployment developed in two stages: first, between 1991 and 1995; second, from 1995 to the present.

A low level of registered unemployment, lack of labour market information and substantial unemployment dominated the first phase. From the end of 1995, we carried out regular surveys on economic activity, employment and unemployment using standard international techniques. Since 1999, we have conducted these surveys in the last month of every quarter to provide an authoritative assessment of labour market trends. Each quarter, we question 40,000 15-70-year-olds in urban and rural localities. This sample covers 0.13% of this age group. Overall, according to 1999 statistics, the economically active averaged some 22.7 million, 62.3% of all those aged 15-70. In this category, 20 million work for pay while 2.7 million are unemployed.

Conducted under International Labour Organisation procedures, the surveys show unemployment soaring from 5.6% in 1995 to 11.9% in 1999, while amongst those of employment age it was 12.5%. The highest figures were found in the Crimea (Autonomous Republic of Krym), and the oblasts of Zaporozhye, Kiev, Poltava, Rovenskaya, Suma, Ternopol, Kharkov, Kherson and Chernovits.

During 1999, businesses, organisations and institutes, for various reasons, shed 2.7 million jobs while 2.2 million found jobs. Further analysis of the 1999 data revealed that 12.7% of men and 12.3% of women were unemployed. On average, the unemployed spent nine months looking for work and their unemployment lasted 18 months. Almost a third of all unemployed people were aged 15-24. Our data show the more educated were not necessarily more immune to unemployment than those with fewer educational advantages. The highest unemployment coefficient was amongst those with a vocational education. Figuree 2.3 shows how unemployment related to educational background.

*Figure 2.2: Unemployed by gender and level of education (%) (1 January 2000) [35]*

| Age | Men | | | Women | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| | Incomplete intermediate education | Full intermediate and vocational education | Higher vocational education | Incomplete intermediate education | Full intermediate and vocational education | Higher vocational education | Incomplete intermediate education | Full intermediate and vocational education | Higher vocational education |
| 25-29 | 12 | 16 | 11 | 12 | 16 | 9 | 12 | 16 | 10 |
| 30-39 | 8 | 14 | 9 | 9 | 13 | 9 | 8 | 13 | 9 |
| 40-49 | 7 | 14 | 8 | 8 | 12 | 8 | 7 | 13 | 8 |
| 50-59 | 6 | 12 | 7 | 4 | 10 | 5 | 5 | 11 | 6 |
| 25-59 | 8 | 14 | 9 | 8 | 13 | 8 | 8 | 13 | 8 |

In 1999, the main reasons for unemployment included:

- redundancies due to reorganisation, liquidation, conversion (re-targeting of output), staff reduction (40.1%)
- release from work at own request (27.1%)
- inability to find work after completing studies (18.1%)

An upward surge in registered unemployment dominated 1998-99. Half our employed now go to an employment centre for help to find work. In 1999, they totalled 1,436, 600; and, on a monthly average, there were 1,252,200 unemployed, 31.9% more than the previous year. In 1999, of the unemployed officially registered at the employment agency, 10% had full higher education, 22% had core higher education, 32% had vocational and technical education, 30% had full general intermediate education, and around 6% had only initial or core intermediate education.

Together with the International Labour Organisation definition of unemployment, Ukraine, like many other Newly Independent States (NIS), uses the term "so-called registered unemployment". So jobless people registered by the state employment services are referred to as "registered unemployed". On 1 January 2000, the level of officially registered unemployment was 4.3% or 1,204,600, which was 165,300 (or 15.9%) more than the figure in the previous year. A sixth of the unemployed also applied for supplementary social benefits because they could not compete equally in the labour market. Of the total unemployed, 62% were women and 30.5% were under 28.

Labour market difficulties led to a rise in family unemployment. By the end of 1999 there were, on average, over 41,000 families with several unemployed members, 27.1% more than at the start of the year. A key index of unemployment is the length of time without work. On average, time spent on job-hunting rose from nine months in 1998 to 11 in 1999. Of those regarded as unemployed on 1 January 2000, 23% had not worked for three months, 17.3% for three to six months, 25.2% for 6-12 months, and 34.6% for over a year.

Throughout the country, during 1999, the number of job vacancies rose by 50% (from 34,600 on 1 January to 50,700 on 31 December). As a result, the number of available people per vacancy fell from 30 to 24; for manual workers, it fell from 30 to 24, for white collar workers from 37 to 30, and for



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vacancies not requiring any particular training from 76 to 54. In the current year, however, the number of people available per manual worker's job in agriculture rose from 12 to 20. To encourage employment and reduce unemployment, government policy has focused on creating better work conditions. It has also provided our economy with people better qualified as a result of economic stabilisation and the development of staff training.

The solution to employment and unemployment problems lies in economic stability, the development and even growth of manufacturing, increased investment and business activity, improved regulatory policy, and the encouragement of job creation. An openly competitive economic environment favours the growth of small businesses over larger ones, and these businesses create more jobs per $US 1 million as they usually absorb less capital. This strategy helps reduce prolonged unemployment and maintains higher levels of wages and salaries. Training and retraining for the unemployed play a key role in reducing tension in the labour market. In 1999, 89,800 people were sent on vocational training courses, only 1.5% more than in 1998. In the same period, 88,400 completed training courses, 34.4% more than in the previous year. Of these, 22,900 were taking a course for the first time, 57.3% were retraining, and 8.2% were improving proficiency or qualifications.

We are continuously looking for up-to-date ways of training the unemployed more effectively. In 1999, we carried out vocational training and re-training for 239 occupations (in 1998, the figure was 212) at educational institutions of various types and educational level. In 1999, 126,500 unemployed were assigned to train by employment centers, some 5% of the total unemployed. Recently, a modular system for training the unemployed has been spreading dramatically. Teaching adults is complicated because they attend the same schools as school-age students and use the same textbooks and methods. In other words, we must use educational services suited to the mature unemployed with work experience. With rather developed system of general pedagogical sciences in Ukraine the principles of androgogics have been developing insufficiently. Existed legislation regulated educational services assignment does not allow flexibly to react to training contents changes required on a labour market. Although the approach to teaching in Ukraine is fairly advanced, we have yet to match our methods to people of different ages. Current legislation regulates only conventional educational services.

Worldwide, we can see that countries where the labour force is highly mobile can successfully reduce unemployment. In Ukraine, such mobility is impossible due to several causes: legislation that limits a company's redundancies, the housing shortage (in particular, rental accommodation), and massive differences in house prices around the country. Although Ukraine has passed numerous laws on job placement, the underlying legislation, the *Code of Laws on Work (1972)* is still in force, and several of its provisions seriously obstruct workforce mobility. We ought to supplement the macroeconomic policy aimed at creating new jobs with special work placement programmes. These would combine help in job-hunting, small business development programmes and public works programmes for temporary work.

State employment agency centres offer a variety of services to job seekers. These include help in selecting vacancies, information and occupational services, vocational training, public and seasonal work. Almost 746,000 unemployed used these services in 1999, 1.3 times more than in the previous year. In 1999, by setting up links between employment agencies and employers, we increased the number of jobs that had to be registered by one and a half times compared to 1998. However, the employment centres found jobs for only a fifth of the unemployed. The most acute job placement problems relate to women with children, young people looking for their first job and people approaching retirement. Although each category has a guaranteed quota of jobs, we have yet fully to solve the employment problems of these groups. In 1999, we found work for 82,000 of these people, only 20% of the total.

Public seasonal work programmes have created create employment, especially in regions with high unemployment. In 1999, 250,000 people found work in public works programmes. Of these, 150,000 of these were registered with employment agencies and around 22,000 were taken on for seasonal work programmes. Career advice services provide an active way of working with the unemployed. We have held numerous job fairs and seminars to help various groups to develop job-search techniques and self-employment skills. In 1999, we offered careers advice services to almost 1.8 million people, 1.3 times more than in 1998.

In Ukraine, out of 2,475,900 people registered at employment centres, 467,500 found work in the course of the year. The centres have crossed 803,800 off the register because they proved unco-operative or they withdrew their applications. On 1 January 2000, 1,204,600 were registered at the centres, and 1,174,500 were unemployed.

According to provisional data, in 1999 state funds provided 520.5 million *griven* to help the unemployed in 1999, one and a half times more than in 1998. Most of this (64.4% or 335 million *griven*), went on unemployment benefit.

In 2001, we began to switch to social protection on the basis of insurance against unemployment. Set out in the Law of Ukraine, *On compulsory state social insurance against unemployment*, the state employment agency must adopt new approaches to the complexities of reducing unemployment. In brief, the amount paid in unemployment benefit must be gradually brought in line with the minimum amount required to live in Ukraine. Apart from financial support in the form of unemployment benefit, the Government of Ukraine has approved and implemented various schemes to improve the employment service. It has also introduced a number of social services that form a strategy for employment. These include information and consultation services for placement in work, vocational training, reskilling and proficiency enhancement, careers guidance, public works and grants for employers to create new jobs.

# 3. General vocational education policy and legislation

## 3.1 State education policy and legislation

An effective system to educate and nurture children and young people is vital to any modern state. In Ukraine, the education system largely comprises pre-school, general intermediate, vocational training, higher education, extramural (adult), and the postgraduate levels of *aspirant* and *doctor* (Annexes 1 and 2).

In 1999 work progressed on specialisation and on updating vocational training institutions. We also improved staff and resources for training qualified employees. In Ukraine today, there are 989 state vocational training institutions. These include 106 higher vocational colleges, 11 vocational centres, five agri-business training centres and six art schools.

Our state vocational colleges break down as follows: industry – 282, agriculture – 251, construction – 261, and service sector – 188. Some 30% of the vocational teaching establishments are sited in the Dnepropetrovsk, Donetsk and Lugansk oblasts. There is also a widespread network of over 500 sectoral teaching centres and other types of teaching establishment, all offering initial vocational education and employee qualification improvement. Over recent years, we have provided vocational training and retraining for orphans and the disabled under the special supervision of the employment agency and the Ministry of Education and Science. By concentrating on labour market needs, vocational teaching institutions raised the number of training places for the unemployed under contracts with employment centres from 4,600 in 1994 to 13,100 in 1999. In recent years, the education system has seen substantial changes due to the economic situation and the transition to a market economy. Figure 3.1 shows public expenditure on education and vocational education and training.

*Figure 3.1: Public expenditure on education and vocational education and training, 1 January 2000 (in griven) [35]*

| Public expenditure on vocational education | Public expenditure on education | Gross Domestic Product | Public expenditure on vocational education, as % of Gross Domestic Product | Public expenditure on education, as % of Gross Domestic Product |
|---|---|---|---|---|
| 281,423,000 | 4,719,509,000 | 127,126,000,000 | 0.22 | 3.7 |

The change in the economy influenced the structure of general education establishments. In 1996, only 89 of the 22,200 intermediate educational institutions were private, but, by 1999, this figure had risen to 211. In addition to the general education schools, there were 256 gymnasium, 257 Lycos, 27 colleges and 1,089 combined training and education centres. The latter included schools with


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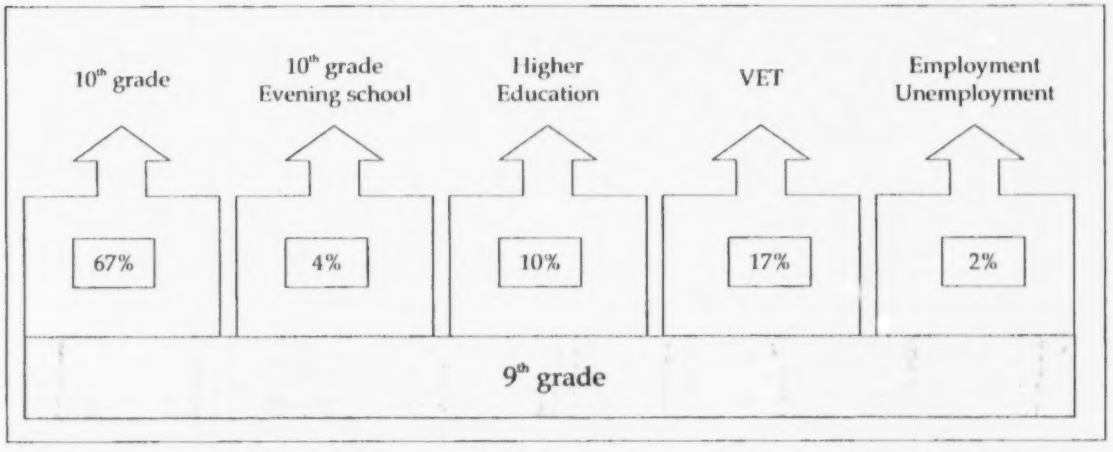
kindergartens and sanatoriums with schools attached. Some 6.9 million children and young people (78% of 16-17-year-olds) attend general education institutions.

Every year sees more 10th grade leavers proceeding to full statutory intermediate education. In 1999, 67% of leavers had completed the ten grades of day school. Of those who went on to higher education, , 4% went to evening classes ('shift' schools for those who need to work and learn ), 17% went to vocational college, and 10% went to higher educational institutions with level I and II accreditation.

***Figure 3.2: Pupils according to educational levels after the finishing Core general intermediate education (International Standard Classification of Education, level 2)***




Figures 3.3 and 3.4 show the number of students in secondary and vocational education, by type of education, as 1 January 2000.

***Table 3.3: Number of students in secondary and vocational education (International Standard Classification of Education, level 3), 1 January 2000 [35]***

| General education | | | Intermediate vocational with examinations, with full intermediate general education | | | Intermediate vocational only, with vocational qualification | | | Overall, intermediate vocational education and training | | | Overall, intermediate education and vocational training | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| 423252 | 519781 | 943033 | 243263 | 113952 | 357215 | 31446 | 19936 | 51382 | 274709 | 133888 | 408597 | 697961 | 653669 | 1351630 |

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*Figure 3.4: Intermediate and vocational education (International Standard Classification of Education, level 3): dropout level, 1 January 2000 [35]*

| Age | General education | | | Intermediate vocational with examinations, with full intermediate general education | | | Intermediate vocational only, with vocational qualification | | | Overall, intermediate vocational education and training | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| Number dropping out in given year | 13083 | 16056 | 29139 | 17584 | 8237 | 25821 | 3682 | 2335 | 6017 | 21266 | 10572 | 31838 |
| Level of drop-out in given year | 1.4 | 1.7 | 3.1 | 4.9 | 2.3 | 7.2 | 7.2 | 4.5 | 11.7 | 5.2 | 2.6 | 7,8 |

Over half a million people study in vocational and technical teaching institutions. However, between 1996 and 2000, the fall in demand for many trades and occupations has reduced the number of vocational colleges from 1,177 to 989 and the number of students from 552,000 to 527,000. Over the same period, the number of qualified leavers fell from 277,000 to 264,000.

Finding jobs for junior specialists is particularly hard. In 1999, almost 40,000 people (one in 10 leavers from higher educational establishments) asked a government employment centre to help them find work.

## *Educational Reform Efforts*

However, the economic crisis has precipitated some severe cuts in the budget. These cuts do not just reduce funding for educational reform, they pose a threat to our whole education infrastructure. As a result, we can only reform the system with support from the international community. As part of a Ministry of Education and Science initiative, we will draft some National Guidelines. These will adumbrate the development of education in Ukraine so that we can clarify a strategy. At the same time, we can set the main priorities for implementing comprehensive measures to reform education at all levels from pre-school to higher education. Further work on the Guidelines will itemise specific issues that require research.

Early in September 2000, the Ministry of Education and Science, working with the International Renaissance Foundation, started work on the National Guidelines. In January 2001, the International Renaissance Foundation (Kiev, Ukraine) joined forces with the Institute of Education Policy (Budapest, Hungary), the World Bank, the United Nations Development Programme and other donor organisations. Together they worked on the Programme for Support of the Development of a Strategy of Reform in Education. This large-scale project aims to help our government frame a national strategy to develop education by:

- initiating a national debate on education;
- encouraging international and public examination of both strategic documents and the government's structural resources;
- helping the Ministry of Education and Science to create and set up the National Guidelines.



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The project's first independent analytical research in the field of education is now complete. This aims to evaluate the state of education and identify possible strategic options for future reform. While this project was in progress, there was also public debate on the document. As a result, we incorporated into the project similar work undertaken by the countries of Central and Eastern Europe (Slovenia, Poland, the Czech Republic, Hungary and Macedonia). The Ministry of Education and Science submitted the National Guidelines for public discussion and review at the Second National Congress of Education Workers in October 2001. The document then went to the government for review. After this stage, the Guidelines will become the framework document for any future investment by the World Bank and other international organisations. It will also provide ground rules for adapting our national education policy to the requirements of European and world practice.

During a seminar on 24-27 January 2001, the Ministry of Education and Science highlighted numerous issues in need of attention. Some of these suffered neglect, and required attention from both the Ministry of Education and Science and the National Observatory.

## 3.2 *Responsible bodies in vocational education and training*

The Law of Ukraine on Vocational Education names the main management bodies for vocational education and their roles. Government administration is provided by:

- the Ministry of Education and Science;
- other ministries and central executive agencies to which vocational education establishments are answerable;
- the Council of Ministers of the Autonomous Republic of Krym, oblast and municipal administrations and any management bodies set up by them to manage vocational education (management boards, committees etc);
- the Intersectoral Board for Vocational Education.

The main functions of the Ministry of Education and Science are to:

- frame state policy on vocational education;
- identify long-term goals;
- draft legislation and other regulatory documents;
- set up, reorganise and close down state vocational education institutions;
- license and certify institutions regardless of ownership;
- carry out state inspections of all institutions, organisations and establishments that train qualified workers, regardless of ownership;
- organise and carry out supervision of the implementation of legislation on social protection for teaching staff and students in vocational education institutions;
- manage state property used by vocational education institutions answerable to the state;
- organise information, methodology support and a statistical audit;
- fund subordinate vocational education institutions.

Once the Ministry of Education and Science has passed acts, the acts must be respected by other central executive bodies, organisations, educational institutions and businesses concerned with training of qualified workers. The Ministry has set up a Department of Vocational Education. Apart from financial and economic roles, this department carries out the main management functions of vocational education; the functions are vested in the Ministry's Department of Economic and Social Development.

The Council of Ministers of the Autonomous Republic of Krym and the oblast and municipal state administrations have the following management roles:

- setting up regional management bodies;
- implementing state policy, legislative acts and other regulatory instruments within a specific geographical area;
- monitoring adherence to state standards by educational institutions, businesses, organisations and all other establishments holding the appropriate state licence;
- carrying out general management of teaching and financial activities in state institutions;
- conducting licensing and accreditation examinations.

The Ministry of Education and Science may delegate its authority to the Council of Ministers of the Autonomous Republic of Krym, the oblast and municipal state administrations and other authorised bodies. Ministries and other central executive bodies, to which institutions are answerable, are responsible for the management of these educational establishments. The Intersectoral Council for Vocational Education is the coordinating body for issues that relate to the identification and implementation of state policy.

The Cabinet of Ministers of Ukraine defines the composition of the Intersectoral Council and its areas of competence. Decree no. 458 of the Cabinet of Ministers of Ukraine of 7 April 1998 has approved the composition and provisions of the Intersectoral Council. Its main roles are:

- analysis of staff training nation-wide;
- drafting proposals to improve the way the system functions;
- encouraging co-operation between the central and local executive bodies, local self-government bodies, businesses, establishments and organisations.

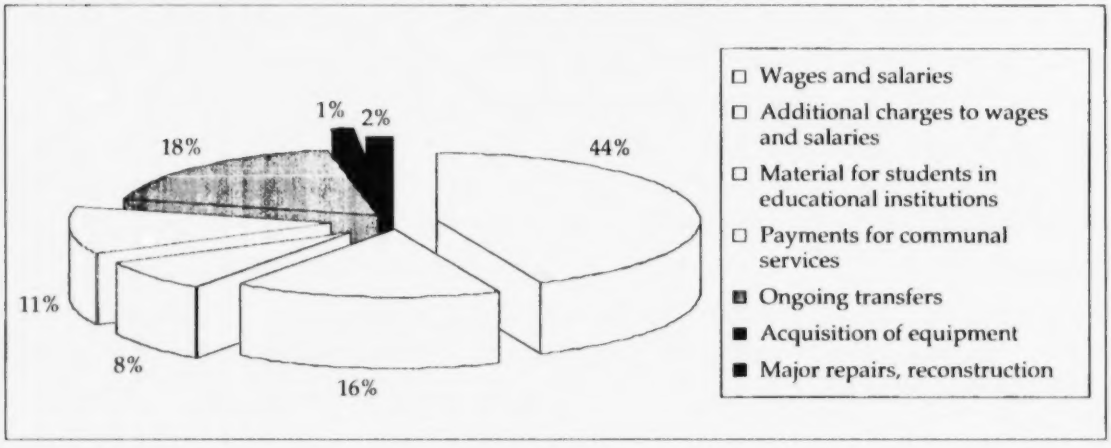
The head of the Intersectoral Council for Vocational Education is one of the vice-prime ministers of Ukraine.

1995 saw the start of the All-Ukraine Association of Vocational Education Employees, as a voluntary organisation of Ukrainian citizens engaged in staff training. The main aims of the new association are to provide social and legal protection for employees and students in vocational education establishments, and to be involved in the maintenance and development of a staff training system. The association co-operates with the Ministry of Education and Science, other ministerial and central executive bodies, organisations, establishments, businesses and educational institutions that voluntarily or contractually carry out or facilitate staff training. The association has its own regional organisations in all Ukraine's oblasts.

## 3.3 Funding vocational and technical education

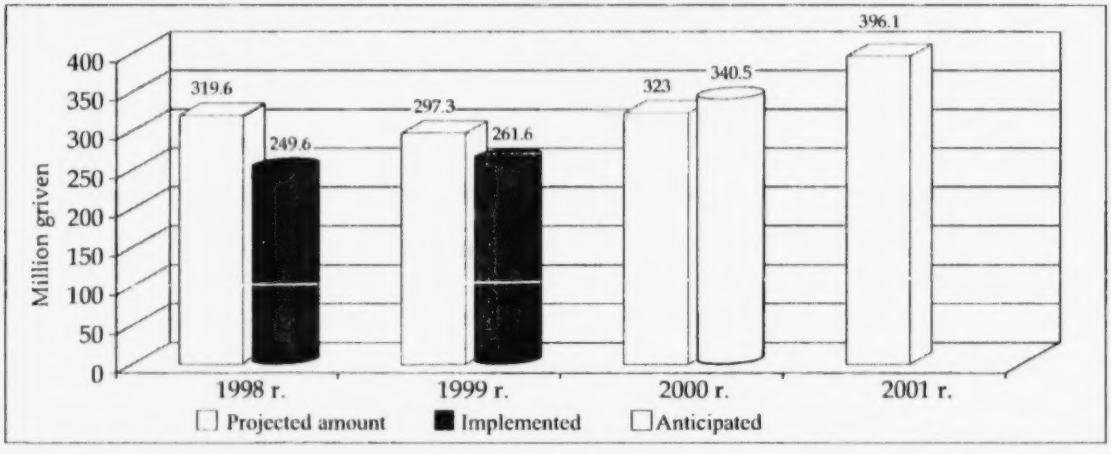
Under Ukraine's law, *On Vocational Education*, the State Budget of Ukraine funds the system. Every year, the projected funds for vocational education and training depend on the size of the state order for training personnel in institutions. At present, 989 institutions have over 523,000 staff. In 2000, the state decreed that there should be 225,000 people to train new students. In 2001, the State Budget for vocational education institutions was 369 million *griven*, equal to 1.2% of the total State Budget and 24% of the funds allocated to the Ministry of Education and Science.

***Figure 3.5: Funds allocated to vocational education and training by Ministry of Education and Science in 2001***




An additional amount, some 2 million *griven*, is allocated by the State Budget for methodological work in vocational education institutions.

***Figure 3.6: Funding for vocational education institutions 1998-2001 [35]***



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Since 2000 there has been a sharp rise in outlay on vocational education institutions. This was due to an average increase of 25% in fixed salaries for those employed in education. Chronic underfunding in recent years has forced educational institutions to seek other ways of raising finance. These include paid educational services, sales of products made during courses or other business activities, sponsorship or other forms of donation, and leasing free space not used for teaching. Since 2000, sums raised by these means have been paid into a special fund for Vocational Schools for which an allowance is made in the State Budget. In 2000, the vocational education special fund stood at 54.3 million griven, and the anticipated total for 2001 was 96.6 million griven. Payments from the special fund are made only through special registered accounts belonging to budgetary organisations under the State Treasury. These funds are destined to pay off salary arrears, to pay for communal services and power, and to cover core functions.

From 2000 on, funds for vocational education institutions will be devoted to developing vocational education standards and re-equipping the institutions with energy-saving technology. Over the last decade, teaching institutions have been unable to find the large sums needed to update their resources. With this in mind, we are assessing the state of their resources, pinpointing priorities identified and drafting a plan to re-equip the institutions.

# 4. The vocational education and training system

## 4.1 *How the legal framework for vocational education developed*

In line with the Law of Ukraine, *On vocational education*, the government has outlined projects to develop a regulatory framework for vocational education. This was virtually completed during 1999 and 2000. It has also passed twenty decrees to boost financial steps to encourage reforms. The decree of the Cabinet on *Ratification of the Provisions on Vocational Education* was published on 5 August 1998. The decree defined types of vocational education institutions with procedures for setting them up, reorganising them and closing them down. It also specified their principal skills and goals.

The provision on organising the teaching process in vocational education institutions was ratified through an order of the Ministry of Education and Science, on 18 May 1998. This order laid down a system that linked planning, organisation and results; it established a procedure for continuous, periodic and final monitoring of the knowledge, skills and capabilities acquired by students at vocational teaching establishments and set up a procedure for awarding qualifications.

The Provision on Multi-Level Vocational Education was ratified by a decree of the Cabinet of Ministers of Ukraine on 3 June 1999. This provision defines three levels ranging from simple to more complex. Each level of training contains both theoretical and practical component, and awards those completing a course with an occupational qualification that reflects their level of achievement. The first level teaches technologically uncomplicated trades with simple actions and operations in terms of output. At the second level, students acquire a qualification in major manual trades of average technological complexity in various sectors.

At the third level, they obtain a high level qualification in technologically complex, heavily science-based trades, occupations and specialisations.

On 30 June 1999, the Cabinet of Ministers of Ukraine passed a decree, *The Ratification of the Procedure for offering job placements to those enrolled in vocational education institutions for industrial training and work experience*. This described the administrative, legal and teaching measures that aim to provide hands-on experience in businesses or the service sector during students' training at vocational schools.

In addition to the above, the following Provisions were drawn up and approved:

- *Provision concerning the procedure for the award of qualifications to, and the acquisition of, qualifications by citizens who obtain vocational education*, as ratified by joint order of the Ministry of Labour and Social Policy and the Ministry of Education. This provision was framed in compliance with the Ukrainian law on *Vocational Education*. It defines a combined procedure: first, for organising the distribution of qualifications and, second, for administering their acquisition by students and employees in vocational education institutions, other teaching establishments, businesses, and other organisations, regardless of ownership and controlling authority.

- *Provision concerning higher vocation colleges and centres for vocational education*, ratified by order of the Ministry of Education and Science on 20 June 2000. This Provision defines a Higher Vocational College as a vocational teaching institution that offers training to highly qualified workers in technically and technologically complex, heavily science-based trades, occupations and specialisation - and/or to people with jobs linked to work that requires complex organisation.

A Vocational Education Centre is a vocational education training establishment that offers retraining and proficiency and qualification improvement to employed workers and to junior specialists. It also welcomes people whose jobs involve new production technologies or services and who therefore require courses that provide the necessary economic, administrative and management capabilities together with computer literacy. A centre may also provide high-level qualifications for leavers from general education schools and retraining for the unemployed. Higher vocational colleges and vocational education centres may also, if they are licensed and accredited, train junior specialists.

**The following regulations have been implemented between 1998 to 2000:**

- *Core structure of curricula for training qualified workers in vocational training institutions*, ratified by order of the Ministry of Education on 17 August 1998;
- *Core structure of curricula in higher vocational colleges*, ratified by order of the Ministry of Education on 3 August 1999.

Using these two core structures, the training institutions draw up the curricula for each trade or occupation; the Ministry of Education and Science has now approved them. The Ministry of Education and Science has also drafted two provisions. One concerns documents for those leaving vocational training institutions; the other covers the setting up of state standards for vocational education. These Provisions have been submitted to the Cabinet for ratification under the appropriate decrees.

Annually, the State Employment Agency sends over 50,000 unemployed on retraining courses at vocational training institutions. The following legislation regulates the administration of vocational training for the unemployed:

- Law of Ukraine, *On compulsory state social insurance for unemployment*, promulgated on 2 March 2000;
- *Provision for organising vocational training for the unemployed in a modular system*, ratified by joint order of the Ministry of Labour and Social Policy and the Ministry of Education on 8 August 1999;
- *Provision for the competitive selection of training establishments to organise vocational training and retraining. And also to improve the systems for advancing the proficiency and qualifications of the unemployed. To be funded by the compulsory State Unemployment Insurance Fund of the Ukraine*, ratified by joint order of the Ministry of Labour and Social Policy and the Ministry of Education and Science on 31 August 2000;
- *Procedure for providing funds during vocational training, retraining or proficiency and qualification improvement for the unemployed*, ratified by order of the Ministry of Labour and Social Policy on 22 November 2000;
- *Instruction on drawing up contracts between educational institutions and businesses, establishments and individuals who apply to the state employment agency for training, retraining and proficiency and qualification improvement*, ratified by order of the Ministry of Labour and Social Policy on 22 July 1999. *On the implementation of a modular system of vocational education*, which names 56 training institutions whose experience will form the basis of documentation for modular courses for a wide range of occupations.

The first stage in this process showed that a modular system of vocational education is more flexible and able to react faster to changing demands of technology and labour market needs. The system is geared to a one-to-one approach that encourages students to reveal their skills and potential to the teacher. This system costs less and helps the student to generate the skills to adapt faster to a specific job.

Directed by the Cabinet, the Ministry of Labour and Social Policy set up the Ukrainian Intersectoral Centre for Modular Training in 1999. Oblast and municipal administrations in 28 regions set up regional centres for modular training. The Centre worked with the regions to implement the modular system of vocational training. This boosted the expansion of the network of vocational schools - schools that offer training, retraining and qualification improvement for manual workers, office employees and the unemployed. Key vocational schools developed dossiers of teaching documentation for the modular system. These incorporated about 2,000 teaching elements and covered 41 trades and occupations that represent many different sectors of our economy. At present, work continues on creating similar dossiers for 75 more trades and occupations. Over 200 vocational training institutions use the modular system for retraining the unemployed.

In Ukraine, we have concentrated on improving the qualifications of teaching staff in training institutions. Here again, we have written dossiers of teaching documentation, and have introduced a modular system of vocational education. Between 1997 and 2000, while the modular system was taking hold in Ukraine, over 400 teaching staff from vocational education and training teaching institutions received training and were awarded certificates.

## 4.2 *Training teachers for vocational education and training*

There are many reasons why we must improve our system for training and retraining teaching staff at vocational schools. These reasons include: the need to update vocational education and training, the need to create conditions for individual self-improvement, and the need to provide the state with a well-qualified workforce.

At present, 52,060 top engineer teachers work in the system. These include 25,000 senior instructors and vocational training instructors, and 18,180 teachers. Nearly half the directors of vocational training institutions and a third of the deputy directors have the appropriate qualifications. The same goes for over half the teachers. Most vocational training instructors have been trained in psychological-teaching. They are also well versed in two or more popular occupations.

Following the recent economic crisis, many highly qualified and skilled teachers left vocational education institutions because their pay was too low. Teachers with branch specialities such as engineering replaced them, but these teachers had no qualifications in psychological teaching.

Given the current number of students, we now have 85% of the vocational training instructors we need and 92% of the teachers (source: "Osvita Ukraine - education of Ukraine"). The Ukrainian Academy for Engineer-Teachers, the Kiev College for Occupational Instructors, and seven industrial technical schools for teachers and their branches are currently preparing teachers for vocational education and training. Together, these institutions produce over 1,000 fully qualified teachers and vocational instructors every year. Some of them also train teachers and vocational training instructors, who already have higher technical education qualifications, in psychological teaching.

Given the proliferation of service-oriented occupations, the current trends in our economy and new approaches to teaching technology, we need teachers who can handle the new curricula and train

people in skills vital to today's labour market. In 2001, the description "Teacher of Vocational Training" (of a certain branch) gained official approval. Furthermore, we have now formulated courses for teaching occupations that take full account of how technological developments will evolve over the long-term.

In building up teaching skills, we focus on the enhancement of occupational skills through post-diploma education and the upgrading of existing accomplishments. The institutions committed to these activities comprise the Central Institute for Training Post-Diploma Teachers, Donetsk Institute of Post-Diploma Education for Engineer-Teachers, and vocational education training centres such as Kharkov and Khmelnytsky.

## 4.3 *Research into vocational education and training*

In 1992, by order of the President and by decree of the Ukrainian Cabinet, the Academy of Teaching Sciences of Ukraine was set up to organise and co-ordinate research into issues of vocational education and training. In 1997, the Academy established a Department of Teaching and Psychology in Vocational Education. This acts as a catalyst for well known academics, individuals with doctorates in teaching and technical sciences, and leading organisers of vocational education and training. Research scientists from the Institute of Teaching and Psychology in Vocational Education, part of the Academy of Teaching Sciences in Ukraine, and from the Donetsk Institute for Postgraduate Educationalists study the problems of vocational education.

Over the past three years, there have been ten main points of interest:

- the philosophy of vocational education;
- various stages in the history of vocational education in Ukraine;
- comparative analysis of teachers concerned with multi-level vocational education overseas;
- the psychological and educational principles of teachers in vocational training institutions;
- key principles of integrating the content and form of training and the educational content of typical disciplines into graded vocational education;
- current theoretical and methodical principles of teacher training;
- procedure for implementing state standards of vocational education;
- procedures for teaching special disciplines, the arts and educative work in graded training in various types of vocational training institutions;
- administrative and educational principles of training qualified staff in a market economy;
- psychological principles of one-to-one training for young students in continuing vocational education systems;
- theoretical and methodical principles of vocational consultancy with young students.

Programmes and procedures for each of these ten points were directed to achieve various ends. These included finding appropriate tools and ways of reforming vocational education, and building a sound basis for content, innovative procedures, forms and methods suited to vocational training for young students and various types of unemployed. The results of research into these vocational education issues were summarised in dissertations by candidates for the postgraduate degrees of *candidate* and *doctor* of educational and psychological sciences.

Between 1998 and 2000, 24 doctoral and 57 candidate dissertations on the theory and methodological principles of vocational education and child and adult psychology emerged from just one source - the specialised council of the Institute of Pedagogy and Psychology of Vocational Education (Academy of Pedagogical Sciences of Ukraine). The research results helped to shape the educational process in vocational colleges, higher vocational colleges, agri-business training centres, other training centres, and other types of training institution. The issues were also discussed in many journals, including *Vocational Education and Training* and *Pedagogics and the Psychology of Vocational Education*; and in collected scientific works, for example *Contemporary Information and Innovative Training Methods in the Training of Professionals: Methodology, Theory, Practice, Problems*, *The Dialogue of Cultures: Ukraine in a World Context*, and also in the journal *Vocational Education: Pedagogy and Psychology*, published jointly with colleagues in Poland.

At the same time, we had severe financial problems during the publication of research results and scientific and methodological literature. The latter concerned new curricula and new ways of training staff that reflected trends at home and abroad.

Research departments and laboratories within the Academy of Pedagogical Sciences depend on state allocations that do not cover experimental work. As a result, we now urgently need to establish a special scientific sub-department to explore issues pertinent to vocational training, retraining and qualification improvement for the unemployed.

Future lines of research include:

- the scientific basis of state policy when forecasting developments in vocational education and training;
- development of a new approach to expanding vocational education in Ukraine;
- theoretical and methodical approaches to drafting and implementing state standards for vocational education and training;
- the basis of vocational education;
- development and introduction of new technologies in vocational training;
- theoretical/methodical principles of preparing vocational training teachers;
- theoretical and socio-economic principles of vocational training, retraining and qualification improvement for the unemployed;
- justification for psychological, teaching and other requirements in training and methodological literature for vocational education and training institutions;
- foreign systems of vocational training;
- past approaches to teaching, and aspects of training qualified employees at various points in history in Ukraine and other countries.

We are reinforcing our contacts with overseas institutes that conduct research into vocational education issues (Prague, Warsaw, Radom, Chenstokhov, Moscow, St Petersburg etc). We are also working more closely with international organisations such as the United Nations Educational, Scientific and Cultural Organisation, the European Training Foundation and the International Labour Organisation.

## 4.4 *Conclusions: Complications and issues for the future*

Given the expansion of the system for vocational education and training, we conclude:

1. The socio-economic state of Ukraine continues to be unstable although encouraging signs are emerging. Social problems are getting worse, the demographic situation is deteriorating, there is less and less scope for making the most of the workforce, unemployment figures continue to rise while real pay drops, and so on.

2. Growth in Ukraine's economy is frozen. This is due to slow structural change in the economy, low investment volume and the failure of state agencies to support the national output. It is also due to a faulty tax system, economic inequalities and uneven development between the regions, and reluctance to introduce innovative approaches and information technology into the management of economic growth.

3. We must overcome these barriers to a sound economy and revitalise our socio-economic development. To achieve this, we must carry out some economic, technical, administrative and legislative measures. We must also discuss the ways in which different bodies depend on each other. And we must appreciate that we can only achieve effective results in macro- and micro-economies by reconciling the three aspects of state politics – the economic, the social and the technical. At the same time, success hinges on improvements in vocational education. These include: better selection of curriculum content, training methods more relevant to future employment, and more revealing research.

4. As well as purely economic factors, other issues influence changes in, and the growth of, the labour market. These include: lack of any real demand for labour, flaws in the way we reward work, low pay, an undeveloped social partnership structure, weak co-ordination between employment services and the vocational training system for employees, and adherence to obsolescent trades, occupations and qualifications.

5. Crisis factors in the economy and social and public life slow down the pace and character of reforms within the whole education system, especially within vocational education and training. Staff training does not take account of market place realities. Currently, we have a number of pressing tasks. We must:

   - improve the network of institutions for vocational education and training;
   - open new types of training institutions, integrate practitioners, and draw up new standards;
   - develop new curricula, and train and retrain teaching staff;
   - introduce new vocational training for teachers and publish material that relates to today's occupations;
   - issue up-to-date course material and make modern educational and production technologies part of the practical teaching process;
   - strengthen ties between teaching institutions, employers and other social partners;
   - improve pay and social protection for those who work in education.

6. We would benefit from further research into new approaches to the management of vocational education and training, the workings of different ways of teaching, and advances in levels of independence and self-management in different types of teaching institution. We must also

improve our system for collating sectoral statistics, and enhance our way of integrating our results with international statistics and standards.

7. We can resolve many of the above issues because we now have an expanded multichannel funding system for vocational education. We have launched effective ways of making this system work even better and expand even more. We have also identified new sources of funding. And we can now attract overseas donors and hire specialists to solve urgent problems that concern the training of production workers.

8. We must reinforce and enlarge international co-operation in the fields of vocational education and the labour market. We must identify and implement progressive ideas in foreign and domestic experience. And we must integrate the national system for vocational education and training into the international educational arena.

To reform vocational education, we must research problem areas in the philosophy of education, continuing education, teaching, psychology, sociology, economics, the theory and practice of vocational education, the theory of training, and the theory and practice of nurture and education. We must swiftly pursue this research, and ensure it relates to global trends and current and future demands in social and public development.

In both theory and practice, we need to develop a sound foundation for new and still-emerging concepts in vocational education. This is due to this century's global issues, the rapid spread of information and communication technologies, and the urgent need to train production staff for various sectors in manufacturing, agriculture and services.

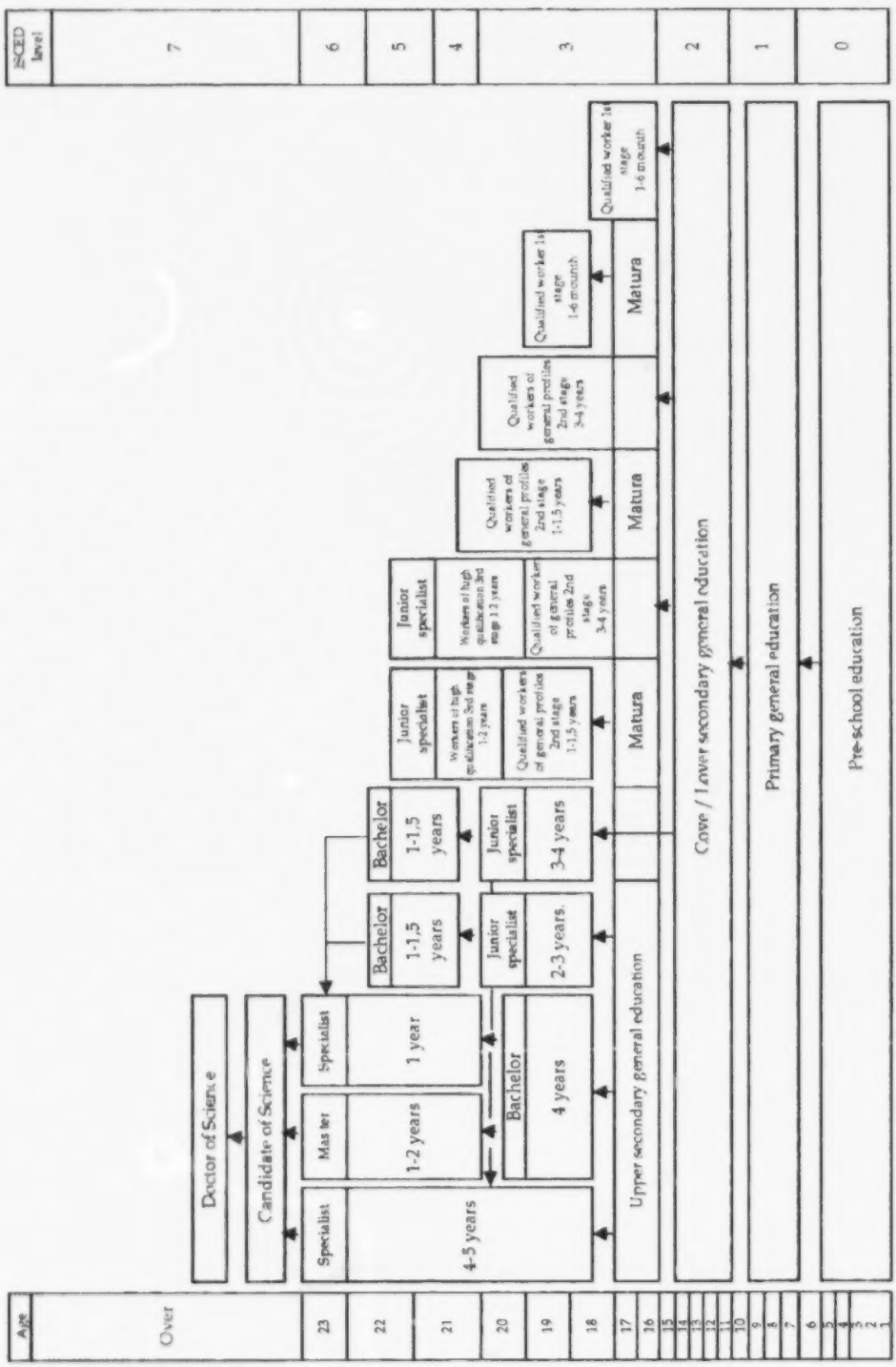
To develop a new approach to vocational education and training (initial training, qualification improvement, and re-qualification), we had to change the way in which we took decisions, especially when researching key issues such as:

- assessing employers' financial contribution to vocational education;
- evaluating and implementing job placement schemes;
- appraising curricula for vocational education institutions and assessing their suitability for market conditions;
- examining teacher training requirements.

# Annexes

## *Annex 1*

### *Education system of Ukraine*





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# Annex 2

## Ukraine: National Education System

| International Standard Classification of Education 1997 | National level | National name of course | Entry requirements | Qualification awarded | Typical age at start of course | Typical age on completion | Theoretical duration | Theoretical total duration of initial/inter-mediate stages | Theoretical total duration of third stage (tertiary) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| LEVEL 0 | 0 | Pre-school education | | | 3 | 6-7 | 3-4 | | | |
| LEVEL 1 | 1 | Initial general intermediate education | | | 6-7 | 10 | 3-4 | 4 | | |
| LEVEL 2 | 2 | Core general intermediate education | | Certificate | 10 | 15 | 5 | 9 | | Core general intermediate education is obligatory for all children (Level 2A). It takes place in a basic general education school, and lasts 9 years (not including pre-school education). Pupils acquire a certificate based on results. |
| **LEVEL 3** | | | | | | | | | | |
| 3A | 3A(a) | Full general intermediate education | Certificate | Certificate of Studies | 15 | 17 | 2 | 11 | | Full general intermediate education takes place at senior general education schools, gymnasia, lycees, vocational and technical teaching institutions, higher educational institutions offering Levels I and II accreditation (tekhnikums, colleges). Students receive a Certificate of Studies based on results. |
| 3A | 3A(b) | Vocational and technical education - Level I | Certificate, Certificate of Studies | Certificate of Qualification Level | 15 | 17 | 0,5-2 | 11 | | Provides a qualification for less complex trades and occupations in vocational and technical teaching institutions and combined teaching units in industrial environments. Also offers proficiency and qualification improvement or requalification for individual trades and occupations. Certificates state qualification levels depending on results. Certificates also go to those who fail to complete courses. |
| 3B | | | | | | | | | | |
| 3C | 3C(a) 3A+3C | Vocational and technical education - Levels II and III | Certificate, entrance examinations | Certificate of Studies, Qualified Worker Diploma | 15 | 18 | 3 | 12 | | Vocational and technical education (Levels I and II) for major and science-intensive trades and occupations offered in vocational and technical teaching institutions (technical colleges, higher vocational colleges, vocational education and training centres etc). This is based on the core general intermediate education. The Certificate of Studies (full general intermediate education) is awarded depending on results and the Qualified Worker Diploma relates to particular trades and grades. |



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| International Standard Classification of Education 1997 | National level | National name of course | Entry requirements | Qualification awarded | Typical age at start of course | Typical age on completion | Theoretical duration | Theoretical total duration of initial/inter-mediate stages | Theoretical total duration of third stage (tertiary) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 3C | 3C(b) | Vocational and technical education - Levels II and III | Certificate of Studies, entrance examinations | Qualified Worker Diploma | 17 | 18-19 | 1-2 | 13 | | Vocational and technical education (Levels II and III) for major and science-intensive trades and occupations takes place at vocational and technical teaching institutions (technical colleges, higher vocational colleges, vocational education and training centres etc). This is based on a full general intermediate education. The Qualified Worker Diploma relates to particular trades and grades, depending on results. |
| LEVEL 4 | | | | | | | | | | |
| 4A | 4A | | | | | | | | | |
| 4B | | | | | | | | | | |
| 4C | 4C | | | | | | | | | |
| LEVEL 5 | | | | | | | | | | |
| 5B | 5B(a) 3A+5B | Higher education course | Certificate, entrance examinations | Certificate of Studies, Junior Specialist Diploma | 15 | 18-19 | 3-4 | 13-14 | 2 | Higher education takes place at higher teaching institutions with Levels I and II accreditation (tekhnikums, colleges, centres) on the basis of core general intermediate education. The Certificate of Studies for full general intermediate education and the Junior Specialist Diploma are awarded according to results. Particular qualifications go to those who specialise. |
| | 5B(b) | Higher education course | Certificate of Studies, Qualified Worker Diploma, entrance examinations | Junior Specialist Diploma | 17 | 19-20 | 2-3 | 14-16 | 3-5 | Higher education takes place at higher teaching institutions with Levels I and II accreditation (tekhnikums, colleges, centres) on the basis of full general intermediate education, 3C(b) vocational education. It is also offered by higher vocational colleges and vocational education and training centres on the basis of vocational education (Levels II and III, level 3C(b)). The Junior Specialist Diploma is awarded on results. Particular qualifications go to those who specialise. |
| 5A | 5A(a) | Incomplete higher education | Certificate of Studies, entrance examinations | Academic reference for incomplete higher education | 17 | 19-20 | 2-3 | | 2 | Incomplete higher education - first stage of higher education in higher educational institutions with Levels III and IV accreditation (institutes, academies, universities). Duration, 2-3 years. An academic reference goes to students who discontinue their studies. |





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| International Standard Classification of Education 1997 | National level | National name of course | Entry requirements | Qualification awarded | Typical age at start of course | Typical age on completion | Theoretical duration | Theoretical total duration of initial/inter-mediate stages | Theoretical total duration of third stage (tertiary) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| | 5A(b) | Basic higher education (baccalaureate)) | Certificate of Studies, Junior Specialist Diploma, entrance examinations | Baccalaureate Diploma | 17-20 | 21 | 4; 1* | | 4 | Core higher education, lasting 4 years, takes place at higher educational institutions with Levels II-IV accreditation (colleges, institutes, academies, universities). *1 year duration on basis of Junior Specialist Diploma in corresponding discipline in multi-stage higher education system with harmonised curricula and courses. The Baccalaureate Diploma with an extra qualification goes to those who specialise. |
| | 5A(c) | Higher education | Certificate of Studies, Junior Specialist Diploma, entrance examinations, Baccalaureate Diploma | Specialist Diploma | 17-21 | 22-24 | 5; 1** | | Not less than 5 years | Higher education, lasting at least 5 years (arts and humanities, economics - 5 years; engineering - 5-6 years, medicine - 6-7 years), takes place at higher educational institutions with Levels III and IV accreditation (institutes, academies, universities). ** 1 year duration on the basis of Baccalaureate Diploma in corresponding discipline in multi-stage higher education system with harmonised curricula and programmes. A Specialist Diploma goes to those who focus on a particular subject. |
| | 5A(d) | Higher education | Specialist Diploma | Specialist Diploma | 23-24 and over | 25-27 | 2-3 | | 6-8 | Additional higher education for specialists who wish to obtain a second specialisation or improve/refresh their knowledge. Lasting 2-3 years. Takes place in specialist faculties of higher education institutions with Levels III-IV accreditation (institutes, academies, universities). A Specialist Diploma goes to those who focus on a particular subject. |
| | 5A(e) | Higher education (master's) | Baccalaureate Diploma | Master's Degree | 21 | 23-24 | 1-2 | | 5-6 | Higher education, lasting 1-2 years, on basis of Baccalaureate Diploma. Educational programme with research into specific fields of science. Master's degree. |
| | 5A(f) | Internship | Baccalaureate Diploma in Medicine | Specialist Diploma | 23 | 24 | 1 | | 8 | Educational course for medical graduates from higher education institutions for practical skills. Specialist Diploma and Certificate for professional activity in field of medicine. |
| **LEVEL 6** | | | | | | | | | | |
| 6 | 6(a) | Aspirant postgraduate candidate of University or Institute of Academy of Sciences | Specialist Diploma, Master's Degree | Candidate of Sciences Degree | 22-24 and over | 25-27 and over | 3 | | 8-9 | Must pass candidate examinations and undertake scientific work. |
| | 6(b) | Doctor, postgraduate candidate of University or Institute of Academy of Sciences | Learned level of Candidate of Sciences | Doctor of Sciences Degree | 25-27 and over | 27-30 and over | 2-3 | | 10-12 | Must undertake scientific work offering new solutions to fundamental scientific/academic problems of real importance in the field of research. |

*Note: Under the Law of Ukraine On general intermediate education, staged transition to 12-year full general intermediate education starts in 2001.*
*Source: National Observatory of Ukraine*





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# Annex 3

## Bilateral and Multilateral Collaboration in Vocational Education and Training

International collaboration promoted the development and reform of vocational education and training. Special attention went to improving methodology, content and standards within the context of "The Vocational Education and Training Standard Development", an international project supported by the European Training Foundation.

The definition of key levels of educational competence have provided the basis for standards in vocational and educational training (the Model of Educational Competence). The main regulations, forms and substance of the model have often been discussed by specialists in Vocational Education and Training at national and international seminars, at the Intersectional Council for Vocational Training, and at the Vocational Education and Training Department of Academy of Pedagogical Science of Ukraine.

Between 1995 and 1997, a project entitled 'Making Model Training Centres' was realised by the establishment of three centres that now train business people. The centres were established in the context of an Advice Programme called TRANSFORM. Masterminded by the German Federal Ministry of Education, Science, Technology and Research and our own Ministry of Education, TRANSFORM enjoys the active support of the German Federal Institute of Vocational Education, the Carl Duisburg Company and the Dr. P. Rahn and Partner Academy of Economy, Leipzig, Germany.

We have briefed training companies so they can help commercial organisations to understand innovative technology. As a result, there are now 18 training firms working in different regions of Ukraine. They all belong to the Ukrainian National Centre of Training Firms, an association first formed in 1998 and registered in 2000 as an associate member of EUROPEN (FRG).

The Labour Market Analysis came on stream between 1999 and 2000. An international project jointly set up by Belarus, Moldova, Russia and Ukraine, it has the support of the European Training Foundation. It aims to equip workers with qualifications relevant to the labour market, to implement exchange schemes between countries, and strengthen links with social partners. Between 1999 and 2000, we considered applying to European organisations that might help fund projects devoted to the reform of vocational education and training. We also identified the priority sectors and regions. Meanwhile, various international bodies contributed to the development and reform of this type of training.

We gave special attention to improving the methodology of the content of standards for vocational education and training. We then drafted our findings under the aegis of the international project on the *Development of Vocational Education and Training Standards*, which is in turn supported by the European Training Foundation. We then defined the key needs for an educational standard; and, using them as a basis, drafted a model vocational education standard.

Vital procedural provisions, and the forms and substance of the model, frequently came under discussion at national and international seminars. It was also discussed at meetings between the Intersectoral Council for Vocational Education, part of the vocational education and training department within the Academy of Pedagogical Sciences of Ukraine, and vocational education teachers.

*Analysis of the Labour Market* was an international project carried out jointly during 1999 and 2000 by Belarus, Moldova, Russia and Ukraine. With the support of the European Training Foundation, this

aimed to identify links between training qualified employees and labour market requirements. It also encouraged these countries to pool their experiences, and reinforced links with social partners. During the same years, preparatory work was undertaken to examine the possibility of attracting donor organisations from European countries to invest in parallel-funding projects supporting the reform of vocational and educational training. Priority sectors and regions were identified for this.

With the support of the European Training Foundation, we embarked on a three-year international project, *Vocational Education and Training Reform in Ukraine.* This focuses on agriculture, transport and tourism.

In 2000, we examined the possibilities of a joint Russo-Ukrainian project with St Petersburg. The project, *Entrepreneurship in Education and Training*, aimed to involve various types of vocational education institutions.

# Annex 4

## Main organizations

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**Ministry of Labour and Social Policy of Ukraine**
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**Ministry of Economy of Ukraine**
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Fax: : (044) 226 31 81
Email: meconomy@me.gov.ua
Web: www.me.gov.ua

**Ministry of Agriculture Policy of Ukraine**
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Khreschetik Str., 24
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Fax: (044) 229 85 45
Web: www.minagro.kiev.ua

**Ministry of Transport of Ukraine**
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Web: www.mintrans.kiev.ua

**State Employment Centre of Ukraine**
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**Scientific and Methodical Centre of High Education**
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**Academy of Pedagogical Science of Ukraine**
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**Institute of Pedagogy and Psychology of Vocational Education of Academy of Pedagogical Science of Ukraine**
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